

ON THE FOOD-PLANTS OF INDIAN GEOMETRIDAE  
AND PYRALIDAE

By

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This paper is the third of the series started by that *On the Food-plants of Indian Bombyces* (Heterocera), (1940, Journ. Bomb. Nat. Hist. Soc., xli, 817-27) and followed by one *On the Food-plants of Indian Agastidae and Noctuidae*, (1941, *ibid*, xlii, 421-30).

The two families treated in the present paper appear to have been even more neglected than the Bombycidae and Noctuidae, they are probably less important from the economic point of view, and recorded food-plants are very few. I have been able to obtain a number of records from Lefroy's *Indian Insect Life*, but unfortunately the copy I have been able to consult is incomplete, the pages dealing with the Geometridae being missing.

I have used the same abbreviations as in the two previous papers, the only fresh one being 'Lefroy' for *Indian Insect Life*.

GEOMETRIDAE

OENOCHROMINAE

Ozola Wlk.

*O. microniaria* Wlk.—*Premna latifolia* (Lep. Ceyl., Seitz).

Some Australian species feed on *Eucalyptus*.

HEMITHEINAE

Pingasa Moore

*P. ruginaria* Guen.—*Nephelium lichi* (mihi).

*P. chlora* Cr.—Coffee (Lep. Ceyl., Seitz).

Terpna H.—Sch.

*T. ornataria* Moore—*Laurineae* sp. (mihi).

Dindica Moore

*D. polyphaenaria* Guen.—*Laurineae* sp. (mihi).

Dysphania Prout

*D. prunicolor* Moore—*Carallia* (Lep. Ceyl., Fauna, Seitz).

*D. palmyra* Stoll.—*Carallia integerrima* (Lep. Ceyl., Fauna, Seitz).

Agathia Guen.

*A. lycanaria* Koll.—*Oleander* (mihi).

*A. laetata* F.—*Oleander* (Lep. Ceyl., Fauna, Seitz, mihi), *Carissa carandas* (mihi).

Hipparchus Leach

*H. papilionaria* L.—Birch (non-Indian).

Tanaorrhinus Btlr.

*T. vittata* Moore—A pupa was found in a curled leaf of *Quercus* sp. (mihi)

Anisozyga Prout

An Australian species feeds on ferns.

Chloromachia Warr.

*C. divapala* Wlk.—*Myrtus* (Lep. Ceyl., Fauna).

Lophomachia Prout

*L. semialba* Wlk.—*Loranthus* (Lep. Ceyl.), *Myrtus* (Seitz).

Osteosema Warr.

*O. sanguilineata* Moore—*Maesa chisia* (mihi).

- Rhomborista Warr.  
*R. pannosa* Moore—Loranthus (Lep. Ceyl., Fauna, Seitz).  
 Comibæna Hbn.  
*C. cassidara* Guen.—Zizyphus, Ixora (Seitz mihi), Lagerstroemia indica (mihi).  
 Gelasma Warr.  
*G. dissimulata* Wlk.—Terminalia catappa (Seitz).  
 Thalassodes Guen.  
*T. quadraria* Guen.—Polyalthia longifolia (mihi).  
*T. veraria* Guen.—Rose, Chrysanthemum flowers, Lagerstroemia flos-reginæ (mihi).  
*T. dissita* Wlk.—Barringtonia (Lep. Ceyl.).  
 Oenospila Swinh.  
*O. flavifusata* Wlk.—Barringtonia (Lep. Ceyl.), Eugenia jambos (Aiyar. Journ. Bomb. Nat. Hist. Soc., xliii, 673).  
 Hemitheia Dup.  
*H. tritonaria* Wlk.—Ficus (Fauna).  
 Iodis Hbn.  
*I. argularia* Wlk.—Rubus sp. (mihi).

## STERRHINÆ (ACIDALIINÆ)

- Ptochophyle Warr.  
*P. togata* F.—Eugenia jambolana (mihi).  
 Chrysocraspeda Hamps.  
*C. abhadra* Wlk.—Eugenia (Lep. Ceyl.).  
 Scopula Schrank.  
*S. emissaria* Wlk.—Aeschynomene indica (mihi).  
*S. cleoraria* Wlk.—Lantana sellowiana, Plumbago capensis (mihi).

## LARENTIINÆ

- Cidaria Treit.  
*C. silaceata* Schiff.—Impatiens sp. (mihi).  
*C. delecta* Btlr.—Virginia Creeper (mihi).  
*C. aurigena* Btlr.—Impatiens sp. (mihi).  
*C. obscurata* Warr.—Impatiens sp. (mihi).  
 Photoscotia Warr.  
*P. miniosata* Wlk.—Rubus sp. (mihi)  
 Callabraxas Btlr.  
*C. amanda* Btlr.—Saxifragaceæ sp (mihi).  
 Phthonoloba Warr.  
*P. decussata* Moore—Rose, Apple, Citrus spp. (mihi).

## BOARMINÆ

- Abraxas Leach.  
*A. grossulariata* L.—Ribes, Euonymus, Calluna and many others (non Indian).  
*A. sylvata* Scop.—In Europe on Elm.  
 Peratophyga Warr.  
*P. aerata* Moore—Hypericum sp. (mihi).  
 Urapteryx Leach  
*U. sambucaria* L.—Ivy (non-Indian).  
 Thinopteryx Btlr.  
*T. crocoptera* Koll.—Vine, Virginia Creeper (mihi).  
 Osicerda Wlk. (Prionia Hbn.)  
*O. squalidaria* Hbn.—Ixora (Lep. Ceyl.).  
 Leptomiza Warr.  
*L. calcearia* Wlk.—Rubus sp. (mihi).

- Macaria Curt.  
*M. fasciata* F.—Mimosa concinna (Lep. Ceyl., Fauna).  
*M. fidoniata* Guen.—Acacia catechu (Iac Research Institute Bulletin).  
 Orsonoba Wlk.  
*O. clelia* Cr.—Convolvulaceae (Lep. Ceyl., Fauna).  
 Hyposidra Guen.  
*H. talaca* Wik.—Jambona, Combretum, Ficus parasiticus (Lep. Ceyl., Fauna), Castor (mihi).  
 Luxiaria Wlk.  
*L. obliquata* Moore—Melastoma normale (mihi).  
 Petelia Herr.—Sch.  
*P. medardaria* Herr.—Sch.—Zizyphus jujuba (mihi).  
 Fascellina Wlk.  
*F. chromataria* Wlk—Cinnamomea (Lep. Ceyl., Fauna).  
*F. plagiata* Wlk.—Laurineae (mihi).  
 Biston Leach.  
*B. suppressaria* Guen.—Cassia auriculata (Lep. Ceyl., Fauna), Cassia sp., Lagerstroemia indica, Carissa carandas (mihi).  
*B. bengaliaria* Guen.—I suspect Pine trees.  
 Medasina Moore.  
*M. strixaria* Guen.—Acanthads (Lep. Ceyl.).  
*M. albidaria* Wlk.—Rose, Cherry (mihi).  
 Boarmia Treit  
*B. bhurnitra* Wlk.—Rose, Geranium, Maesa chisia, Sympocos sp., Melastoma normale (mihi).  
*B. boarmiaria*. Guen.—Plumbago rosea (Lep. Ceyl.).  
*B. selenaria* Hbn.—Apple (mihi).  
*B. acaciaria* Bsd.—Cinnamomea (Lep. Ceyl., Fauna), Rose, Apple, Pansy (mihi).  
 Psyra Wlk.  
*P. spurcataria* Wlk.—Rose, Maesa chisia (mihi).

## PYRALIDAE

## GALLERIINAE

On wax in bee hives and nests of wild bees (Lep. Ceyl.).

Trachylepidia Rag.

*T. fructicassella* Rag.—Pods of Cassia fistula (Fauna, mihi).

Achroia Hbn.

*A. grisella* F.—Wax in bee-hives (Fauna).

Lamoria Wlk.

*L. anella* Schiff.—Fallen indigo leaves (Lefroy).

Galleria F.

*G. mellonella* L.—Parasitic in bee-hives (Fauna), bee comb (mihi).

## CRAMBINAE

Usually grass or reed feeders (Fauna), amongst moss in grassy places or in the stems of aquatic plants (Lep. Ceyl.).

Chilo Zinck.

*C. simplex* Btlr.—Cultivated cane, Juar, Bajra, Maize (Lefroy).

*C. zonellus* Swinh.—Jowar, Wheat, Maize, Bajra (Trehan and Pingle, Journ. Bomb. Nat. Hist. Soc., xlvii, 141).

Ancylolomia Hbn.

*A. chrysographella* Zell.—Grass, Rice (Lefroy).

*A. locupletella* Koll.—Spinifex squarrosa (Fauna, Lefroy).

## SCHOENOBIINAE

In the interior of reeds (Fauna).

Scirpophaga Treit.

*S. auriflua* Zell.—Sugarcane, *Saccharum cilare* (Lefroy).

*S. nivella* F.—Sugarcane (Trehan and Pingle, *Journ. Bomb. Nat. Hist. Soc.* xlvii, 141).

*S. monostigma* Zell.—Sugarcane, *Saccharum cilare* (Lefroy).

Schoenobius Dup.

*S. bipunctifer* Wlk.—Rice, probably grasses (Lefroy), Paddy (Trehan and Pingle, *Journ. Bomb. Nat. Hist. Soc.*, xlvii, 144).

## ANERASTIINAE

Anerastia Hbn.

*A. ablutella* Zell.—Sugarcane (Lefroy).

Polyocha Zell.

*P. saccharella* Dudg.—Sugarcane (Lefroy).

*P. cinerella* Hamps.—Euphorbia *neriifolia* (Lefroy).

## PHYCITINAE

On leaves or in the stems of plants, some in dried animal or vegetable substances (Lep. Ceyl.).

Ephestia Guen.

*E. cautella* Wlk.—Rice and wheat flour, tamarind seeds (Lefroy).

*E. cahiritella* Zell.—Rice and wheat flour (Lefroy).

Heterographis Rag.

*H. verrucicola* Hamps.—In wart-like excrescences on *Trema orientalis*, tunnelling in the diseased wood (Fauna).

*H. bengalella* Rag.—In Custard Apple fruits (Fauna).

Euzophera Zell.

*E. peticella* Rag.—Brinjal (Lefroy, Trehan and Pingle, *Journ. Bomb. Nat. Hist. Soc.*, xlvii, 147).

*E. puniceella* Moore.—In Pomegranate fruits (Fauna).

*E. cedrella* Hamps.—Deodar cones (Lefroy).

Microthrix Rag.

*M. inconspicua* Rag.—Sugarcane (Lefroy).

Nephopteryx Hon.

*N. eugraphella* Rag.—Cured Tobacco, *Mimusops elengi* (Fauna).

*N. divisella* Dup.—Euphorbia (Fauna).

*N. paurosema* Meyr.—Pods of *Cassia tora* (Lefroy).

*N. semirubella* Scop.—Lotus, *Hippocrepis*, *Trifolium*, etc. (Fauna), Maize (Lefroy).

Myelois Hbn.

*M. pectinicornella* Hamps.—Seeds of *Pongamia glabra* (mijji).

Hypsipyla Rag.

*H. robusta* Moore.—In the small branches of mahogany (Fauna), in shoots of *Cedrela toona* (Lefroy).

Phycita Curt.

*P. dentilinella* Hamps.—Chitin (Lefroy).

*P. clientella* Zell.—*Solanum* (Lefroy).

*P. infusella* Meyr.—Cotton (Lefroy, Trehan and Pingle, *Journ. Bomb. Nat. Hist. Soc.* xlvii, 145).

*P. jasminophaga* Hamps.—Flower buds and young leaves of *Jasminum sambac* (Fauna).

Etiella Zell.

*E. zinckenella* Treit.—In pods of *Colutea*, *Crotalaria juncea*, *Phaseolus*, etc. (Fauna).

## EPIPASCHINAE

Coenodomus Wlsm.

*C. hockingii* Wlsm.—*Eugenia jambolana* (Fauna).

*C. rotundinidus* Hamps.—A tree of the Laurel tribe (Fauna).

Orthaga Wlk.

*O. exvinacea* Hamps.—Mango (Trehan and Pingle, *Journ. Bom. Nat. Hist. Soc.*, xlv, 150).

*O. vitalis* Wlk.—*Cinnamomium* (Lep. Ceyl).

## CHRYSAUGINAE

## ENDOTRICHINAE

Nothing recorded concerning the Indian species.

## PYRALINAE

Hypsopygia Hbn.

*H. mauritalis* Bsd.—Wax, larvae, etc. in nests of *Polistes hebraeus* (Lefroy).

Pyralis L.

*P. farinalis* L.—Oatmeal, Po'ato, etc. (Lefroy).

## HYDROCAMPINAE

The larvae of some species of *Nymphula* feed on water-plants and are fitted for a life below the surface of the water (Fauna).

*Nymphula* Schrank.

*N. affinalis* Guen.—Water plants (Lefroy)

*N. fluctuosalis* Zell.—Rice (Fauna).

*N. depunctalis* Guen.—Rice (Lefroy), Paddy (Trehan and Pingle, *Journ. Bomb. Nat. Hist. Soc.*, xlv, 144).

## SCOPARIINAE

The larvae feed on mosses and lichens, except in a few ancestral forms in New Zealand, which are grass feeders (Fauna).

## PYRAUSTINAE

Pycnarmon Led.

*P. cribrata* F.—*Coleus parviflora* (Aiyar, *Journ. Bomb. Nat. Hist. Soc.*, xl, 336).

*Zinckenia* Zell.

*Z. perspectalis* Hbn.—*Amaranthus*, Beetroot, Maize, Garden plants (Lefroy).

*Z. fascialis* Cr.—*Impatiens* sp. (mihi).

*Cnaphalocrocis* Led.

*C. medinalis* Guen.—Rice, grasses (Lefroy).

*Marasmia* Led.

*M. trapezalis* Guen.—Maize, Juar, Bajra (Lefroy).

*Syngamia* Guen.

*S. abruptalis* Wlk.—*Ocinum sanctum* (Lefroy).

*S. floridalis* Zell.—*Urticaceae* sp. (mihi).

*Caprinia* Wlk.

*C. conchylalis* Guen.—*Kicksia*, *Holarrhena antidysenterica* (Lefroy).

*Filodes* Guen.

*F. fulvidorsalis* Hbn.—*Thunbergia alata* (Fauna, Lep. Ceyl.).

*Phryganodes* Guen.

*P. analis* Snell.—*Cassia fistula* (mihi).

- Dichocrocis Led.  
*D. punctiferalis* Guen.—Mango flowers, Castor, Garuga pinnata fruits, Cacao (Lefroy), unripe seeds of Castor (mihi) Guava, Castor, Mango (Trehan and Pingle, *Journ., Bomb. Nat. Hist. Soc.*, xlv, 149).
- Nacoleia Wlk.  
*N. vulgaris* Guen.—Lucerne, Soya, Phaseolus radiatus (Lefroy).  
*N. diemenalis* Guen.—Phaseolus mungo (Lefroy).
- Botyodes Guen.  
*B. asiaticus* Guen.—Ficus (Lep. Ceyl., Fauna).
- Sylepta Hbn.  
*S. aerogata* F.—Cotton (Trehan and Pingle, *Journ., Bomb. Nat. Hist. Soc.* xlv, 144), Hollyhock and other Malvaceae (mihi):  
*S. lunalis* Guen.—Grape vine (Lefroy).
- Lygropia Led.  
*L. quaternalis* Zell.—Sida rhombifolia (Lefroy):
- Agathodes Guen.  
*A. orientalis* Hbn.—Erythrina indica (Lefroy).
- Glyphodes Guen.  
*G. negatalis* Wlk.—Ficus religiosa, Dillenia indica fruits (Lefroy).  
*G. vertumnalis* Guen.—Tabernaemontana coronaria (Lefroy, mihi).  
*G. glauculalis* Guen.—Tabernaemontana (Lep. Ceyl.)  
*G. unionalis* Hbn.—Jasmine (mihi).  
*G. bivitalis* Guen.—Ficus oppositifolia (Lep. Ceyl.), Ficus religiosa (mihi).  
*G. caesalis* Wlk.—Ficus religiosa (mihi).  
*G. canthusalis* Wlk.—Ficus religiosa (mihi).  
*G. sinuata* F.—Moduca (Lep. Ceyl., Fauna).  
*G. indica* Saund.—Cotton (Fauna), Cucurbitaceous plants (Lefroy).
- Polythlipta Led.  
*P. divaricata* Moore.—Phaseolus (Lep. Ceyl., Fauna).
- Lepyrodes Guen.  
*L. neptis* Cr.—Jasminum sambac (Lefroy, mihi).  
*L. geometralis* Guen.—Jasminum sambac (Lefroy).
- Leucinodes Guen.  
*L. orbonalis* Guen.—In brinjal fruits (Fauna, Trehan & Pingle, *Journ., Bomb. Nat. Hist. Soc.*, xlv, 147), in fruits of various Solanaceae (mihi).
- Crocidolomia Zell.  
*C. binotalis* Zell.—Crucifers (Lefroy).
- Hellula Guen.  
*H. undalis* F.—Cabbage, Cauliflower (Lefroy).
- Terastia Guen.  
*T. meticulosalis* Guen.—In young stems of Erythrina (Fauna).
- Isocentris Meyr.  
*I. opheltesalis* Wlk.—Sunflower (Lefroy).
- Crocidophora Led.  
*C. phyophora* Hamps.—Bamboo (mihi).
- Maruca Wlk.  
*M. testulalis* Geyer—Pulses (Lefroy).
- Pachyzancla Meyr.  
*P. phoapteralis* Wlk.—Anisomeles ovata (Lefroy), grasses (Cherian & George, *Journ., Bomb. Nat. Hist. Soc.*, xxxi, 530).  
*P. aegrotalis* Zell.—Croton, Schizandra, Alternanthera (Lefroy).
- Phlyctaenodes Guen.  
*P. nudalis* Hbn.—Croton, Fenugreek (Lefroy).
- Antigastra Led.  
*A. catalaunalis* Dup.—Sesamum (Lefroy, Trehan & Pingle, *Journ., Bomb. Nat. Hist. Soc.*, xlv, 149).

Noorda Wlk.

*N. blitealis* Wlk.—Moringa pterygosperma (Lefroy).

Metasia Guen.

*M. coniotalis* Hamps.—Sweet potato tubers (Lefroy).

Pionea Guen.

*P. ferrugalis* Hbn.—Cabbage, Blumea balsamifera (Lefroy).

Pyrausta Schrank.

*P. machoeralis* Wlk.—Teak (Fauna).

*P. incoloralis* Guen.—Calotropis gigantea (mihi).

*P. coclesalis* Wlk.—Bamboo (Fauna), occasionally on Maize (Lefroy).

*P. bambucivora* Moore—Bamboo (Fauna).

*P. salentialis* Snell.—Boring in stems of Polygonum (Lefroy).

I have, in addition, the following record, but the species does not appear in the Fauna and I am not sure of its actual affinities.

*Phostria piasnalis* Wlk.—Coleus parviflora (Aiyar, Journ., Bomb. Nat. Hist. Soc., xi, 336).

## THE BUTTERFLIES OF THE KHASIA AND JAINTIA HILLS, ASSAM

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Since the publication of Swinhoe's list in 1893 we have not been able to trace any detailed list of butterflies from the Khasia and Jaintia Hills in Assam and the present list is intended to assist collectors in giving as precise information as possible with regard to localities.

The high plateau of the Khasia and Jaintia Hills is almost bare of trees save scattered pines. The forests are on the lower hills. They commence at Umran, 21 miles from Shillong, called the 42nd Mile since miles are reckoned from Gauhati on the Gauhati Road (G. S. Road). Good localities are Mile 40 near the Margaret Falls; Mile 36 near Umsaw Nongkharai Village; the path into the forests at Mile 33; another such path at Mile 36; Nongpoh Inspection Bungalow at Mile 30; Umling forest path at Mile 23; Burnihat Inspection Bungalow and the path leading up the river from it at Mile 16.

Shillong 5,000 ft., Umran 2,300 ft., Nongpoh 1,760 ft., Burnihat plains level.

No advantage has been found from penetration into the woods elsewhere. The villages are few and the whole region is very malarious in the monsoon.

The other wooded area is to the south on the slopes towards Sylhet District, extending from the Garo Hills border on the west to the North Cachar Hills on the east. There are many villages growing oranges, areca nuts, bag leaf trees and pan vines; but travel is difficult except for the district officers, as there are no rest houses and porters are needed. The only areas accessible are those beside the Shillong-Sylhet motor road and that below Cherrapunjee.